

WHAT IS CLAIMED IS:

1. A method of constructing a composite receiving band filter in a radio transmission/receiving device in which the same communication frequency band is used for transmission and receiving modes, a low-pass filter for preventing a discharge of higher harmonics is arranged between an antenna and a transmission circuit under the transmission mode, and a band filter corresponding to said communication frequency band is arranged between the antenna and the receiving circuit under the receiving mode, wherein:

the low-pass filter setting a cut-off frequency for an upper limit frequency of said communication frequency band is connected to said antenna; a high-pass filter setting a cut-off frequency for a lower limit frequency of said communication frequency band is connected to a signal input terminal of said receiving circuit; a switch circuit for connecting said low-pass filter to a signal output terminal of said transmission circuit under the transmission mode and connecting said low-pass filter to said high-pass filter under receiving mode is provided; and

a band filter comprising a serial circuit of said low-pass filter and said high-pass filter is composed under the receiving mode.

2. A method of constructing a composite receiving band filter in a radio transmission/receiving device in which one band is selected from a plurality of communication frequency bands under transmission and receiving modes, a low-pass filter for

preventing a discharge of higher harmonics is arranged between an antenna and a transmission
5 circuit under the transmission mode, and a band filter corresponding to the selected
communication frequency band is arranged between the antenna and a receiving circuit under the
receiving mode, wherein:

10 a first switch circuit for connecting only a low-pass filter corresponding to the selected
communication frequency band to said antenna is provided between each low-pass filter setting a
cut-off frequency for an upper limit frequency of said each communication frequency band and
said antenna;

15 a second switch circuit for connecting only a high-pass filter corresponding to the
selected communication frequency band to a signal input terminal of said receiving circuit is
provided between each high-pass filter setting a cut-off frequency for a lower limit frequency of
said each communication frequency band and said receiving circuit; and

a third switch circuit for connecting said low-pass filter to said transmission circuit
under the transmission mode and connecting each low-pass filter to each high-pass filter under
receiving mode is provided between said each low-pass filter and said each high-pass filter of
which communication frequency bands mutually correspond.